UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/776,873	02/11/2004	Yuh-Jye Chang	2	3312

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Docket Administrator (Room 3J-219)
Lucent Technologies Inc.
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EXAMINER
WANG, JIN CHENG

ART UNIT	PAPER NUMBER
2672	

DATE MAILED: 07/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
      application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date *2/11/2004*.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claim 1 is objected to because of the following informalities: on line 10 of the claim 1, "rending" should be "rendering". On line 13 of the claim 8, "rending" should be "rendering". On line 3 and 10 of the claim 13, "rending" should be "rendering". Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kothuri et al. U.S. Patent No. 6,381,605 (hereinafter Kothuri).

Re Claims 1, 8 and 13:

Kothuri discloses a method for rendering a display on a computer system, the display having a plurality of objects (e.g., Figs. 3 and 6A displays a plurality of objects), the method comprising the steps of:

Loading an index table in a secondary memory of the computer system (*e.g., creating and manipulating an R-tree in which a hierarchical index such as an R-tree index may be stored in a database with a first table in the database configured to store information concerning the index and possibly an identifier of a root node of the index and a second table configured to*

store a record or row for each node of the index; column 3, lines 50-61 and column 9-10

discloses creating an R-tree index for storage in a database from multi-dimensional data and a

multi-dimensional data index allow for all desired data to be retrieved in a single query), the

index table containing a plurality of entries (*e.g., the index table has a plurality of records or*

entries wherein each record for an index node may consists of items such as a unique identifier

of the corresponding node, an identifier of a parent node, an identifier of a sibling node, a

measure of the number of children of the node, and an entry for each child; column 3, lines 62-

67 and column 4, lines 1-19) directed to particular ones of the objects of the plurality of objects,

and the index table being derived from a modified quad tree representation of the display (*e.g.,*

Fig. 4 describes a modified quad tree representing a plurality of objects), the modified quad tree

consisting of a quad tree and a balanced search tree (*e.g., R-tree is considered as a modified quad*

tree; see column 2, lines 20-30 and column 30, lines 1-25 in which query algorithms for quad-

tree and the R-tree are disclosed for the nearest neighbor query and the R-tree is a balanced

search tree because the R-tree data is distributed fairly evenly across the multiple dimension in

which the dataset are divided most equitably and the distribution of data values within each

dimension is computed. The data is sorted in the dimension having the greatest variance and the

sorted dataset is divided in that dimension as close to a median value as possible; column 10,

lines 20-34);

Retrieving, from the plurality of entries, information describing the particular ones of the

object (*column 10, lines 21-34, column 19, lines 5-16 and column 20, lines 10-25)*;

Rendering the display on the computer system as a function of the retrieved information,

the display being a two-dimensional representation of the retrieved information (*e.g., Figs. 7A-*

7B and column 20 wherein the R-tree of Fig. 7B is one indexed representation of the dataset 600

of Fig. 6A which is the two-dimensional representation of the dataset).

Kothuri discloses R-tree, but he is silent to "a modified quad tree" and "a balanced search

tree".

However, Kothuri discloses indexing the multi-dimensional data with a B-tree structure

and the index table stores the nodes of an R-tree index (column 8) and R-tree is a balanced

search tree (column 9-10) and therefore Kothuri at least suggests the claim limitations.

One of the ordinary skill in the art would have been motivated to do this because

Kothuri's method is applicable to quad tree as well as R-tree comprising a modified R-tree data

and a R-tree index wherein the R-tree index is a balanced search tree (column 20).

Re Claims 2 and 9:

Kothuri further discloses the size or capacity of leaf nodes and/or other nodes of an R-

tree index may be determined by a parameter of the computing environment in which the

database is maintained (column 9, lines 15-20) and the total number of data items is no greater

than the node capacity of the index (column 14, lines 60-65) and thereby disclosing that

loading/creating the R-tree index table is determined as a function of a viewer capacity cap (the

total number of data items to be displayed or the display page size). Kothuri therefore discloses

the number of point data items, polygons in the dataspace being counted and thus disclosing that

creating the index table is dependent on a number of objects per pixel count.

Re Claims 3 and 10:

Kothuri discloses the R-tree data are organized as the modified quad tree including a

plurality of nodes (parent nodes), each node having a plurality of cells (the children nodes or the

leaf nodes holding data subsets) such that each cell (a leaf node) may hold information about more than one object (data subsets) of the plurality of objects (column 13, lines 45-50).

Re Claims 4 and 15:

Kothuri further discloses the modified quad tree derived as a function of a topology of the display (Fig. 6a and 7a-7b).

Re Claims 5, 11 and 14:

Kothuri further discloses the loaded index table contains entries for only those objects within a viewing area defined by a user of the computer system (Fig. 6a and 7a-7b and column 20).

Re Claims 6 and 12:

Kothuri discloses inserting a data item in the index table by modifying the plurality of entries as function of (i) a cell id associated with a particular cell of the plurality of cells, and (ii) a depth level associated with the plurality of cells because when adding a data item, the R-tree index is traversed from the root to find an appropriate leaf node in which to insert the data item and the choice of which branch or sub-tree to follow from a given node is made based upon which child node would require the smallest increase in its MBA if the new data item were added and thereby the plurality of entries in the index table has to be updated (column 15-17).

Claim 7:

Kothuri discloses GIS data sets including the topology of the geographic information systems.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jin-Cheng Wang whose telephone number is (571) 272-7665. The examiner can normally be reached on 8:00 - 6:30 (Mon-Thu).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (571) 272-7664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jcw

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